Ontario

Ontario Influenza Bulletin 2007-2008 Season

Ministry of Health & Long-Term Care
Public Health Division

SURVEILLANCE WEEK 49 (December 2– December 8) 2007

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from December 2 - December 8, 2007, (Week 49). The analysis for this issue occurred on Thursday December 13, 2007, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during week 49, 2007 was slightly higher compared to week 48, 2007. Twenty-four sporadically occurring cases of influenza A were reported through iPHIS from health units. There were no new reports of institutional outbreaks of influenza. For week 49, the highest level of influenza activity was 'sporadic' reported from North East, Central East, and Central West, the remaining regions in Ontario reported 'no activity' for influenza.

In Canada for week 48, influenza activity levels remained low; most regions across the country reported 'no activity'. Twenty regions reported sporadic influenza activity and only 1 region (central Alberta) reported localized activity†.

Tip of the day:

For health unit staff assigning influenza activity levels for their unit (Appendix C data), please note that for "sporadic activity", symptom onset dates for lab-confirmed cases must fall within the surveillance week on the reporting form. Onset date of symptoms, not the date of lab confirmation, is when activity occurs (please refer to footnote on pages 2 and 3 for episode date hierarchy).

Please continue to submit weekly activity reports weekly by 4 p.m. every Tuesday. Please refer to pages 12 & 13 for report submission dates.

Table 1: Summary of confirmed influenza cases and institutional influenza outbreaks by health region (Week 49, 2007).

Confirmed influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	3	0	7	10	0	4	24
Influenza B	0	0	0	0	0	0	0	0
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	3	0	7	10	0	4	24
Institutional influenza outbreaks‡	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SOURCE: MOHLTC [iPHIS, Health Unit Reports to PHD]

* Includes reports of sporadically occurring influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset in the surveillance period.

† These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 48, 2007.

‡ Confirmed outbreaks in institutions with onset date of symptoms during the surveillance period.

Table 2: Confirmed cases of influenza by health unit & health region, with an episode date† during Weeks 49, 2007

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	0	0	0
	TOTAL NORTH WEST	**0**	**0**	**0**
North East	Algoma	3	0	3
	North Bay Parry Sound District	0	0	0
	Porcupine	0	0	0
	Sudbury & District	0	0	0
	Timiskaming	0	0	0
	TOTAL NORTH EAST	**3**	**0**	**3**
Eastern	City of Ottawa	0	0	0
	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	0	0	0
	Kingston, Frontenac, Lennox & Addington	0	0	0
	Leeds, Grenville And Lanark District	0	0	0
	Renfrew County And District	0	0	0
	TOTAL EASTERN	**0**	**0**	**0**
Central East	Durham Region	0	0	0
	Haliburton, Kawartha, Pine Ridge	0	0	0
	Peel Region	6	0	6
	Peterborough County-City	0	0	0
	Simcoe Muskoka District	0	0	0
	York Region	1	0	1
	TOTAL CENTRAL EAST	**7**	**0**	**7**
Toronto	Toronto	10	0	10
	TOTAL TORONTO	**10**	**0**	**10**
South West	Chatham-Kent	0	0	0
	Elgin-St. Thomas	0	0	0
	Grey Bruce	0	0	0
	Huron County	0	0	0
	Lambton County	0	0	0
	Middlesex-London	0	0	0
	Oxford County	0	0	0
	Perth District	0	0	0
	Windsor-Essex County	0	0	0
	TOTAL SOUTHWEST	**0**	**0**	**0**
Central West	Brant County	0	0	0
	City Of Hamilton	2	0	2
	Haldimand-Norfolk	0	0	0
	Halton Region	2	0	2
	Niagara Region	0	0	0
	Waterloo Region	0	0	0
	Wellington-Dufferin-Guelph	0	0	0
	TOTAL CENTRAL WEST	**4**	**0**	**4**
	TOTAL ONTARIO	**24**	**0**	**24**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Table 3: Cumulative* confirmed cases of influenza by health unit & health region with an episode date† between September 1, 2007 – December 8, 2007

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	0	0	0
	TOTAL NORTH WEST	**0**	**0**	**0**
North East	Algoma	5	0	5
	North Bay Parry Sound District	0	0	0
	Porcupine	0	0	0
	Sudbury & District		0	0
	Timiskaming	0	0	0
	TOTAL NORTH EAST	**5**	**0**	**5**
Eastern	City Of Ottawa	0	0	0
	Eastern Ontario	0	0	0
	Hastings & Prince Edward Counties	0	0	0
	Kingston, Frontenac, Lennox & Addington	0	0	0
	Leeds, Grenville And Lanark District	0	0	0
	Renfrew County And District	0	0	0
	TOTAL EASTERN	**0**	**0**	**0**
Central East	Durham Region	1	0	1
	Haliburton, Kawartha, Pine Ridge	0		0
	Peel Region	9	1	10
	Peterborough County-City	0	0	0
	Simcoe Muskoka District	1	1	1‡
	York Region	6	0	6
	TOTAL CENTRAL EAST	**17**	**1**	**18**
Toronto	Toronto	40	2	42
	TOTAL TORONTO	**40**	**2**	**42**
South West	Chatham-Kent	0	0	0
	Elgin-St. Thomas	0	0	0
	Grey Bruce	0	0	0
	Huron County	0	0	0
	Lambton County	0	0	0
	Middlesex-London	0	1	1
	Oxford County	0	0	0
	Perth District	0	0	0
	Windsor-Essex County	0	0	0
	TOTAL SOUTHWEST	**0**	**1**	**1**
Central West	Brant County	0	0	0
	City Of Hamilton	5	0	5
	Haldimand-Norfolk	0	0	0
	Halton Region	8	0	8
	Niagara Region	0	0	0
	Waterloo Region	1	0	1
	Wellington-Dufferin-Guelph		0	0
	TOTAL CENTRAL WEST	**14**	**0**	**14**
	TOTAL ONTARIO	**76**	**4**	**80**

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

‡Note that the case of influenza reported from Simcoe Muskoka District represents a case co-infected with Influenza A & B

Influenza Subtype(s):
During week 49, 2135 isolates were received by the Public Health Agency of Canada, with 44 testing positive for influenza A and 4 for influenza B. The majority of influenza A isolates (34) were from Ontario (77.3%), while four each (9.1%) were from Alberta and British Columbia and 2 (4.6%) were from Quebec. All four influenza B isolates were reported from Alberta.*

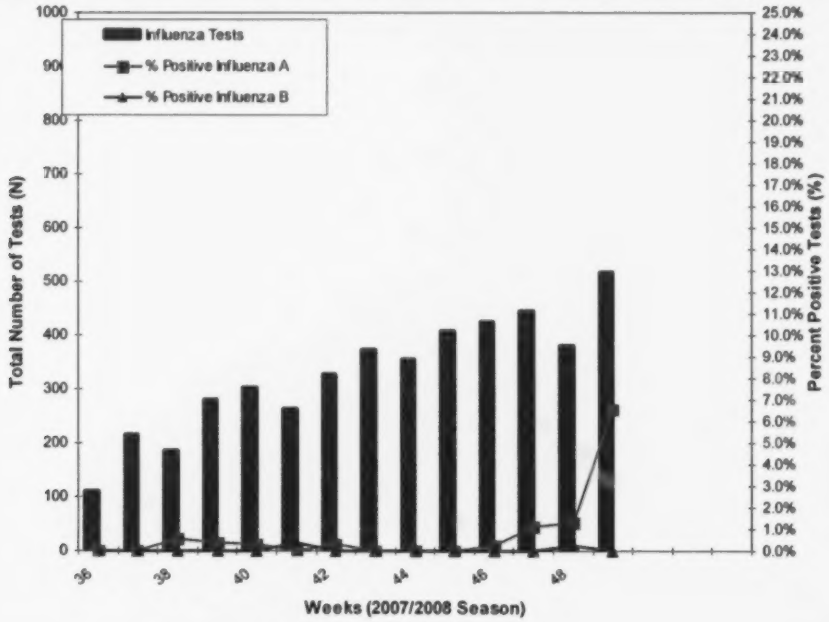
Antigenic Characterization:
The National Microbiology Laboratory (NML) has characterized 16 influenza viruses for the 2007-2008 influenza season: 5 A(H1N1), 5 A(H3N2) and 6 B viruses. All 5 influenza A(H1N1) viruses were antigenically similar to A/Solomon Islands/3/2006 (which is the influenza A(H1N1) component recommended for the 2007-2008 influenza vaccine). Of the 5 influenza A(H3N2) viruses characterized, 4 were antigenically similar to A/Wisconsin/67/2005 (which is the influenza A(H3N2) component recommended for the 2007-2008 influenza vaccine) and 1 was antigenically similar to A/Brisbane/10/2007. One of the four A/Wisconsin-like viruses had reduced titer to A/Wisconsin/67/2005 reference antiserum. Of the 6 influenza B isolates characterized, 1 was antigenically similar to B/Malaysia/2506/2004, the B component of the 2007-2008 influenza vaccine, and 5 were antigenically similar to B/Florida/4/2006, belonging to the B/Yamagata lineage and is the B component recommended for the 2007-2008 influenza vaccine in the Southern Hemisphere**

Antiviral Resistance:
Since the start of the season, the NML has tested 9 influenza A isolates (3 H1N1 and 6 H3N2) for amantadine resistance (from Ontario, Alberta and British Columbia). Four (44% or 4/9) of the isolates tested were resistant to amantadine, all of which were H3N2 viruses (3 originated from Ontario and 1 from Alberta). Of the 13 isolates tested for oseltamivir resistance (9 influenza A, 4 influenza B), none were found to be resistant.**

Note: The WHO recommends that the trivalent vaccine for the 2007-2008 season in the northern hemisphere (which includes Canada) contain an A/Solomon Islands (H1N1)-like virus; an A/Wisconsin (H3N2)-like virus; and a B/Malaysia-like virus.

* These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada: Week 48, 2007.
** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 47, 2007.

Figure 1: Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Infectious Disease Prevention and Control (CIDPC), by report week.



Source: Public Health Agency of Canada
* Total numbers reported include late reports; therefore totals may not be equal to the sum of the weekly numbers.
Note: Cumulative numbers for season to date are available through FluWatch: http://www.phac-aspc.gc.ca/fluwatch/

Table 4a: Institutional respiratory infection outbreaks in Ontario: New Outbreaks* in Week 49 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	**N**	**% (of outbreaks)**
Influenza A	0	0.0
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	1	14.3
Other organisms	0	0.0
No organism identified	6	85.7
TOTAL	***7***	***100***
Total Respiratory Infection Outbreaks of the Season to date**	**N**	**% (of outbreaks)**
Influenza A	2	1.5
Influenza B	0	0.0
Influenza A and B	0	0.0
Parainfluenza (All types)	5	3.8
RSV	3	2.3
Combined Outbreaks†	0	0.0
Other organisms	19	14.3
No organism identified	104	78.2
TOTAL	***133***	***100***
Types of Institutions (All Outbreaks) **	**N**	**% (of outbreaks)**
Long-Term Care Homes	82	61.7
Hospitals	2	1.5
Retirement Homes	10	7.5
Other	1	0.8
Unknown	38	28.6
TOTAL	***133***	***100***

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* New outbreaks are those in which the date of onset of illness in the first case occurred and recorded through iPHIS in the current surveillance period; i.e. December 2 – December 8, 2007

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – December 8, 2007

† Combined outbreaks include outbreaks in which more than one non-influenza organism has been identified (e.g. RSV, parainfluenza, rhinovirus, etc.)

Table 4b: Outbreak Related Complications in institutional respiratory infection outbreaks in Ontario during the Surveillance Season*

Outbreak Related Complications (All Outbreaks)	N	% (of total cases)
Total Cases		
Residents	1435	74.7
Patients	71	3.7
Staff	415	21.6
Total Cases	**1921**	**100**
Deaths		**% (of cases per role)**
Residents	24	1.7
Patients	0	0.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	39	2.7
Patients	0	0.0
Staff	0	0.0
Hospitalizations		**% (of cases per role)**
Residents	36	2.5
Staff	0	0.0
Outbreak Related Complications (Influenza Outbreaks)	**N**	**% (of total cases)**
Total Cases		
Residents	14	36.8
Patients	11	29.0
Staff	13	34.2
Total Cases	**38**	**100**
Deaths		**% (of cases per role)**
Residents	0	0.0
Patients	0	0.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	0	0.0
Patients	0	0.0
Staff	0	0.0
Hospitalizations		**% (of cases per role)**
Residents	0	0.0
Staff	0	0.0

SOURCE: MOHLTC [iPHIS, Health Unit Reports have been extracted using CRN at PHD]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – December 8, 2007

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2007 – December 8, 2007 by causative organism

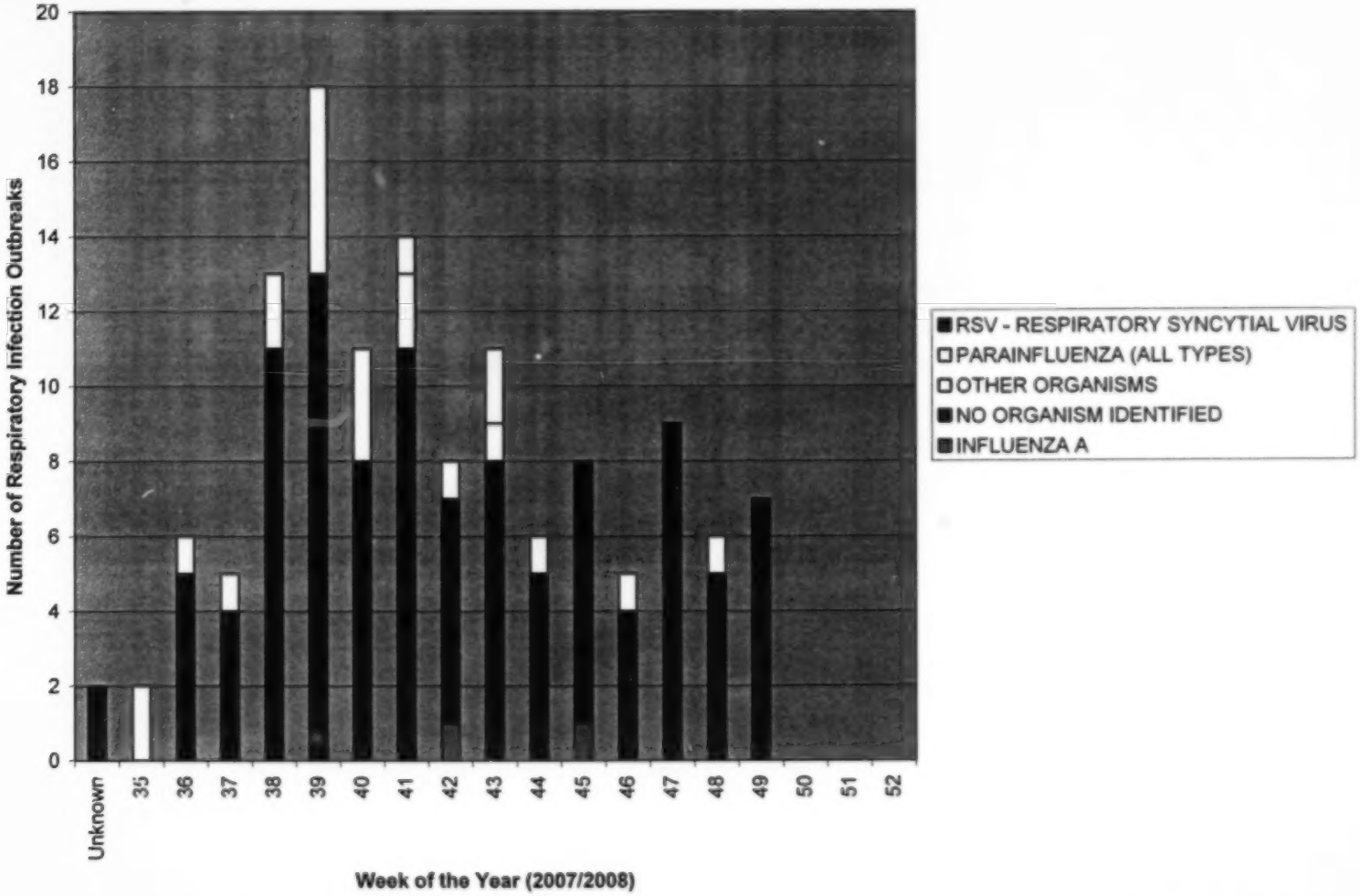
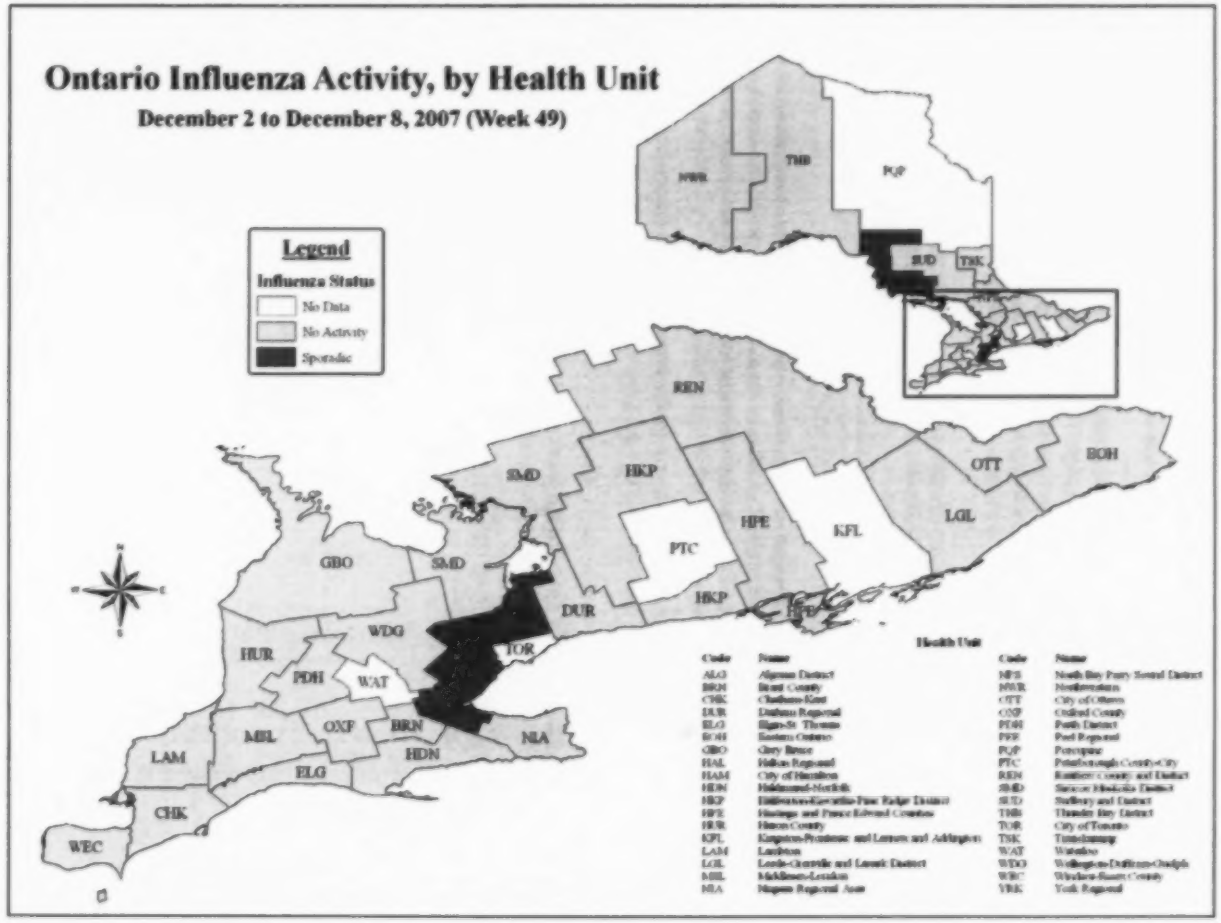


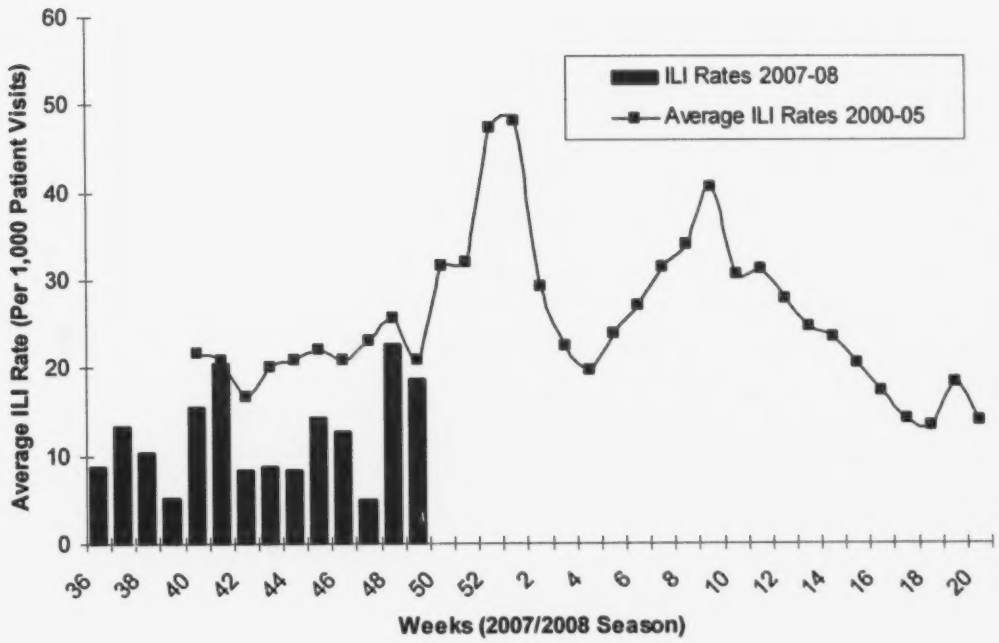
Figure 3: Influenza Activity* levels in Ontario by health unit & health region for Week 49



SOURCE: MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional outbreaks. Please refer to detailed definitions for the 2006-2007 season included in the Appendix-1]

Figure 4: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2007- 2008 season, by report week, Compared to Ontario average† (1999/2000 to 2004/05 seasons).



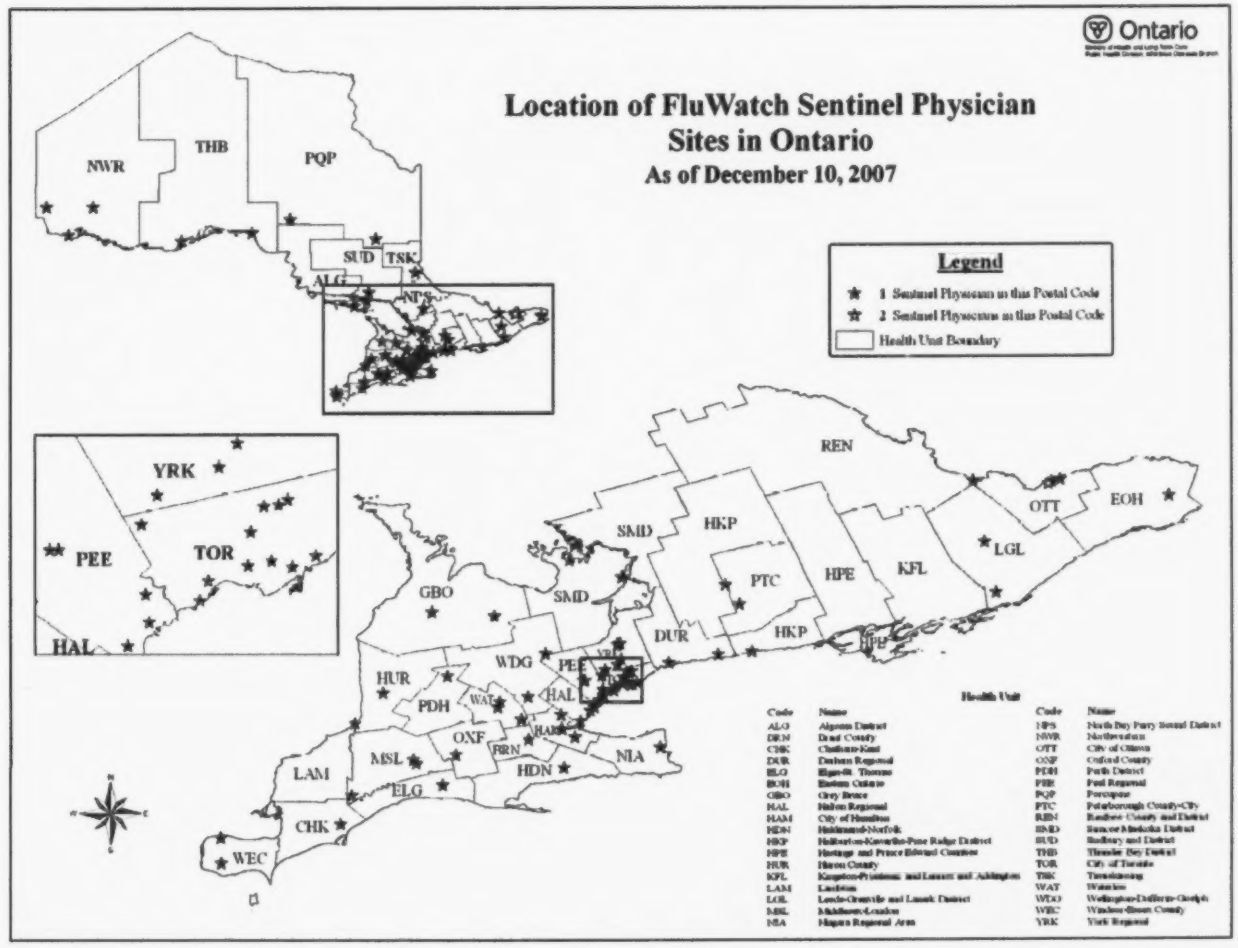
Source: Public Health Agency of Canada
* Sentinel physician information is reported to Public Health Agency of Canada.
†No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.

Table 5: Average Influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 49.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	0	0	0	0
K1L8H2	0	1	0	0	0
K2P1V3	0	0	0	0	0
K1J9M2	3	0	2	0	0
K7H2W6	0	0	0	0	0
K7L1E9	0	0	0	0	0
L1A3W4	0	0	0	0	0
K0L1H0	1	0	0	0	0
N0A1H0	0	0	0	0	0
L1B1H8	0	0	0	0	0
L4L4Y7	0	0	0	0	0
L4J7Y3	0	0	0	0	0
L4C2N9	0	0	0	0	0
L4G7Y3	0	0	0	0	0
M5M1B2	0	1	2	0	0
M4X1W4	0	0	0	0	0
M4E1V8	0	0	0	0	0
M2N6H7	0	0	1	0	0
M2K1E1	0	0	0	0	0
M9W6N5	0	0	0	0	0
L4Y2N8	0	0	0	0	0
L6W2A4	0	0	0	0	0
L9W1G2	0	0	0	0	0
L6L1X8	0	0	0	0	0
L7R1M6	0	0	0	0	0
L9H1V1	0	0	0	0	0
L9H2G2	0	0	0	0	0
L2E1Y3	0	0	0	0	0
N3R7K8	0	0	0	0	0
N1R2L7	0	0	0	0	0
N2M3B5	0	0	0	0	0
N0P2C0	0	0	0	0	0
N0R1G0	0	0	0	0	0
N8T3J8	0	0	2	0	0
N0M1T0	0	0	0	0	0
N0L1Z0	0	1	2	2	0
N6A5R9	0	0	0	0	0
N6C2R5	0	0	0	0	0
N0M1L0	1	1	0	0	0
N0G1L0	0	0	0	0	0
N0C1E0	0	0	0	0	0
L3V5W5	0	0	0	0	0
L3V5S2	2	2	0	0	0
L4R4P4	0	0	0	0	0
P0H2H0	0	0	0	0	0
P0A1C0	0	0	0	0	0
P0M2L0	0	0	0	0	0
P7E1H5	0	0	0	0	0
P0W1E0	0	0	0	0	0
P0T2E0	0	0	0	0	0
P8N2Z6	0	0	0	0	0
ILI Sum	7	6	9	2	0
ILI Consultation Rate (per 1,000 patient visits)	86.42	45.11	13.20	5.15	0.00

Source: Public Health Agency of Canada
* Sentinel physician information is reported to the Public Health Agency of Canada
Note: The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly.

Figure 5: Geographic Distribution of Sentinel Physicians in Ontario



Source: National Research System (NaReS), College of Family Physicians of Canada

* Sentinel physician information is reported to the Public Health Agency of Canada

FURTHER INFORMATION

1. Ontario Ministry of Health and Long-Term Care
   Previous issues of the *Ontario Influenza Bulletin* can be accessed at:
   http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_07/flubul_mn.html

2. Health Agency of Canada
   Issues of FluWatch can be accessed at:
   www.phac-aspc.gc.ca/fluwatch/

3. United States Centers for Disease Control and Prevention
   http://www.cdc.gov/flu/weekly/fluactivity.htm

4. European Influenza Surveillance Scheme
   http://www.eiss.org/cgi-files/bulletin_v2.cgi

INFORMATION ABOUT AVIAN INFLUENZA

For latest information on the status of avian influenza worldwide please use the following link:
Public Health Agency of Canada
http://www.phac-aspc.gc.ca/h5n1/index.html

APPENDIX - I

Definitions for influenza activity levels:

No Data: No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period.

No Activity: No laboratory confirmed* influenza and NO outbreaks detected within the health unit/ influenza surveillance area, within the prior week, although sporadically occurring ILI may or may not be present.†

Sporadic: Sporadically (infrequently) occurring **ILI and at least one lab-confirmed influenza* case with NO outbreaks** detected within the health unit area.†

Localized: sporadically occurring **ILI and lab-confirmed influenza* together with outbreaks of ILI** in schools and work sites, or laboratory-confirmed influenza in residential institutions occurring in < 50% of the health unit . Outbreaks affect a single and/or adjacent geographic area within the health unit jurisdiction, e.g. outbreaks in a nursing home and a school in close proximity to each other.†

Widespread: sporadically occurring **ILI and lab-confirmed influenza* together with outbreaks of ILI** in schools and work sites, or laboratory-confirmed influenza in residential institutions occurring in > 50% of the health unit. Outbreaks affect multiple and non-adjacent geographic areas within the health unit jurisdiction, such as two or more regions of the health unit, two or more municipalities, two or more electoral wards, etc.†

* Confirmation of influenza within the surveillance region at any time within the prior week
† Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

Influenza-Like Illness (ILI) Definitions:

A) ILI in the general population:

Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

B) ILI/Influenza outbreaks:

Schools and work sites: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case**.

Influenza Surveillance Weeks 2007-2008 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
WK50	9-Dec-07	15-Dec-07	18-Dec-07
WK51	16-Dec-07	22-Dec-07	27-Dec-07
WK52	23-Dec-07	29-Dec-07	2-Jan-08
WK1	30-Dec-07	5-Jan-08	8-Jan-08
WK2	6-Jan-08	12-Jan-08	15-Jan-08
WK3	13-Jan-08	19-Jan-08	22-Jan-08
WK4	20-Jan-08	26-Jan-08	29-Jan-08
WK5	27-Jan-08	2-Feb-08	5-Feb-08
WK6	3-Feb-08	9-Feb-08	12-Feb-08
WK7	10-Feb-08	16-Feb-08	19-Feb-08
WK8	17-Feb-08	23-Feb-08	26-Feb-08
WK9	24-Feb-08	1-Mar-08	4-Mar-08
WK10	2-Mar-08	8-Mar-08	11-Mar-08
WK11	9-Mar-08	15-Mar-08	18-Mar-08
WK12	16-Mar-08	22-Mar-08	25-Mar-08
WK13	23-Mar-08	29-Mar-08	1-Apr-08
WK14	30-Mar-08	5-Apr-08	8-Apr-08
WK15	6-Apr-08	12-Apr-08	15-Apr-08
WK16	13-Apr-08	19-Apr-08	22-Apr-08
WK17	20-Apr-08	26-Apr-08	29-Apr-08
WK18	27-Apr-08	3-May-08	6-May-08
WK19	4-May-08	10-May-08	13-May-08
WK20	11-May-08	17-May-08	20-May-08
WK21	18-May-08	24-May-08	27-May-08
WK22	25-May-08	31-May-08	3-Jun-08
WK23	1-Jun-08	7-Jun-08	10-Jun-08
WK24	8-Jun-08	14-Jun-08	17-Jun-08
WK25	15-Jun-08	21-Jun-08	24-Jun-08
WK26	22-Jun-08	28-Jun-08	1-Jul-08
WK27	29-Jun-08	5-Jul-08	8-Jul-08
WK28	6-Jul-08	12-Jul-08	15-Jul-08
WK29	13-Jul-08	19-Jul-08	22-Jul-08
WK30	20-Jul-08	26-Jul-08	29-Jul-08
WK31	27-Jul-08	2-Aug-08	5-Aug-08
WK32	3-Aug-08	9-Aug-08	12-Aug-08
WK33	10-Aug-08	16-Aug-08	19-Aug-08
WK34	17-Aug-08	23-Aug-08	26-Aug-08
WK35	24-Aug-08	30-Aug-08	2-Sep-08